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ABSTRACT

Attributions of causes of successful task performances as a function of task and sex of the performer were investigated. Introductory psychology students (N=157) were presented with closed-circuit, videotaped episodes in which a male or female stimulus person performed a card-guessing task for 10 trials. Subjects heard the task described to the "subject" by a male experimenter as a luck- or skill-based task and than predicted the likely performance of the "subject." Actual trials followed with the success rate programmed by the experimenter; the subjects also evaluated the performance of the "subject." The four independent variables in the 2 x 2 x 2 x 2 factorial design were task, outcome, stimulus person, and sex of subject. Results indicated that: (1) successful females are seen as lucky when compared to male counterparts achieving the same level of performance; (2) observers expected females to be superior on luck-tasks and males to be superior on skill-tasks; and (3) ability, effort, and task difficulty were more relevant for performance on the skill task. (Author)

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Performance Attributions as a Function of Task and Performer's Sex

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A number of recent investigations have found that the sex of the performer influences the attributions made to explain the outcome. A successful female is likely to be seen as lucky compared to her male counterpart achieving the same level of performance. The male's performance may be attributed to his level of ability, a stable quality, while the female's success is seen a deriving from a less stable source.

Related to these findings are other results which indicate that female performers actually do prefer to engage in tasks where the outcome is highly dependent upon luck, moreso than skill. Possibly females feel more confident in these settings, or at least they have become accustomed to seeking outcomes where skill is less important. The convergence of these two bodies of research formed the basis for the present experiment.

If there is this tendency to see females as luckier than males, then possibly they will be expected to perform at higher levels than males when the outcomes are determined be luck, rather than skill. Although luck is usually defined as an external causal factor in influencing performance, females may actually be assumed to possess some greater quantity of luck than males do. The prediction is that observers will, in general, expect females to be superior on luck-tasks, and males to be superior on skill-tasks. Also, a female who is successful on a skill task will be viewed as lucky, while her success on the luck task will be due to the lesser difficulty of the task for her.

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Method

Overview. Subjects were presented with videotaped episodes in which a male or female stimulus person performed a card-guessing task for ten trials. The videotape was presented to subjects as a closed circuit television system, allowing observation of the activities in another room. Subjects heard the task described to the "subject" by a male experimenter as a luck-based or a skill-based task, and then predicted the "subjects" likely performance. The actual trials followed, with the success rate programmed by the experimenter, and the subjects evaluated the other's performance. The procedure involved four independent variables in a 2x2x2x2 factorial design: Task(skill or luck),Outcome(success or failure), Stimulus person(male or female), and Sex of Subject.

Task. The task involved identifying the Ace of Spades from four playing cards placed face down in front of the "subject". To create the luck-skill distinction, the cards were either rearranged without picking them up(skill), or rearranged by shuffling them(luck). The feedback to the "subject" was programmed to produce success(7 correct) or failure(2 correct).

Videotapes. Eight different videotapes were produced, factorially combining the three nonsubject variables. The tapes were designed so that they could run during the entire session, creating the impression a closed circuit system was operating. The episode began with a male experimenter leading a "subject" into a laboratory room. The experimenter explained the task, then excused himself to retrieve some data sheets. This action allowed the observing subjects time to predict the "subject's" performance. When the experimenter returned, the ten trials were conducted, and the feedback provided. After the tenth trial, the experimenter totalled the score, repeated it, and indicated

that it was "better than most" or "worse than most". The "subject" was then led from the room, ending the episode.

Dependent Variables. A two-page questionnaire was used. The first page contained the single item on which subjects indicated their predictions for the stimulus person(Prediction). On an 8-point scale (1= very unlikely, 8= very likely), subjects indicted the likelihood that the subject would do "better than average, i.e. get more than 3 correct".

The second page contained items designed to assess the subjects' evaluations of the performance. The first question involved rating the four causal loci (ability, effort,luck,task difficulty) on 8-point scales (1= very unimportant, 8= very important) in terms of their importance in determining the person's outcome. A second question required dividing 100% between the four loci according to their relative contribution to the performance level.[1] Subjects also rated the degree of Success the person achieved on an 8-point scale (1= very unsuccessful, 8= very successful). Subjects expectations concerning their own performance(Own) on the task were assessed by indicating the number of trial out of 10 that they thought they would be correct. The final question was an open-ended item asking subjects to describe "in their own words" why the stimulus person"achieved the level of performance he/she achieved."

Procedure. Subjects arriving for the experiment waited in a reception area. At the scheduled time, the experimenter (22 year-old female) activated a videotape player hidden in a cabinet so that the television monitor would be operating when subjects entered. The subjects were seated at desks, and were told that they would be observing another subject performing a task over closed circuit television. A sheet was distributed describing the task to

be performed (luck or skill)., along with the questionnaire containing the dependent variables. The episode was timed to begin after subjects had time to read the descriptions. After observing the male experimenter explain the task, the female experimenter instructed subjects to complete the first question (prediction). The remainder of the episode was observed, and then the other scales were completed.

The subjects were not debriefed concerning the use of videotapes, but names and addresses of interested subjects were obtained so that a copy of the results could be sent. All other questions were answered fully.

Subjects. The subjects were 157 introductory psychology students (77 males, 80 females) who volunteered in order to receive extra points toward their course grades. Subjects were run in mixed-sex groups of up to eight.

Results

The nine dependent variables were subjected to a 2x2x2x2 multivariate analysis of variance. The main effects for Task, Outcome, and Sex of Subject(SS) were significant. The Sex of Stimulus Person(SP)x Task, SPxSS, Taskx Outcome, and OutcomexSS interactions were significant. And two of the three-way interactions also were significant: SP x Task X Outcome and SP x Outcome x SS. These results, along with subsequent univariate analyses of variance on the separate dependent variables are summarized in Table 1.

The Prediction item yielded a main effect for Task, with more success predicted on the Skill(4.62) than the Luck task(3.83). The SP x Task X SS interaction was significant, although this effect must be viewed with caution in the absence of a significant multivariate effect. The interaction(Figure1) indicates that males expect males to do worse on the luck task, and better on

skill task than they expect females to do, and that females expect males to do better on the luck task, and females to do better on the skill task. The significant Outcome X SS interaction is uninterpretable, since outcome information was unavailable when the predictions were made.

The ratings of the four causal loci on the 8-point scales yielded main effects for Task on all four. Ability was more important on the skill task(5.10 vs 3.49), as was Effort(6.12 vs 4.05), and Task Difficulty(5.09 vs 3.93). Not surprisingly, Luck was more important on the luck task(6.89) than on the skill task(4.43). The main effect for Outcome on the Ability scale indicated that success led to higher ratings of ability(4.90) than did failure(3-77). The Task x Outcome interaction on the Effort rating suggests that effort is considered most unimportant when the person fails on a luck task. The SP x Task x Outcome interaction was of borderline significance(See Figure 2). The major impact seems to be on the skill task. Female success, compared to male success, leads to higher importance ratings for effort, while male failure produces a greater emphasis on effort than female failure.

The importance of Luck was influenced by the Outcome manipulation. Luck was more important when the person failed(6.04) rather than succeeded(5.15). The SP x Task interaction (Figure 3) suggests that on the luck task, luck is more important for males than females, while on the skill task, luck is more important for females than males. The Task x Outcome interaction is due to the low ratings for luck following success at a skill task. The Outcome x SS interaction seems due to the low perceived importance of luck when male subjects are explaining success.

The Task Difficulty ratings revealed a Task x Outcome interaction. The two tasks received similar ratings following success(4.26 and 4.58 for luck and skill), but following failure, task difficulty was more important on the

skill task(5.57) than on the luck task(3.59).

The Int/Ext index produced main effects for Task and Outcome. Internal factors were assigned more weight on the skill tasks (.44) than on the luck tasks(-.33). Success led to more emphasis on internal (.21) than did failure (-.06). The analysis of the percentages assignedto Task Difficulty yielded main effects for Task and Outcome, as well as SP x Task and Task x Outcome interactions. A higher percentage was assigned when the task was skill-based(21.52%) rather than luck-based(14.01%). Task Difficulty was also higher when the person failed(20.15%) rather than succeeded(15.11%). The SP x Task interaction indicates the two tasks are of equal difficulty for males (luck-16.23%, skill-17.37%), but for females the luck task is less difficult (11.64%) than the skill task(25.66%). The Task x Outcome interaction was apparently due to the higher difficulty ratings for the skill task following failure.

The evaluations of the stimulus person's relative success produced main effects for Task and Outcome, and a SP X SS interaction. Success was rated as lower on the skill task(4.55) than the luck task(5.17), and obviously, success was rated higher following success(7.05) than failure(2.67). The interaction indicated that male subjects rated males as more successful(5.35) than females(4.38), while females showed a tendency to rate females higher (5.13) than males(4.71).

Subjects predictions for their Own performance produced Task, Outcome, and SS main effects, along with a SP x task x Outcome interaction. Predictions were higher for the skill task(5.09 vs 3.96), higher following a successful performance by the other (5.23 vs 3.87), and higher for males subjects (4.99) than for female subjects(4.13). The interaction (Figure 4) shows that females performance was more relevant for predictions on the luck task, while males performance was relevant for the skill task.

Discussion

The significant main effects for the task type and outcome were expected, and they provide few intriguing insights. Even though the same base rates for performance were specified for the tasks, there was a tendency to expect higher performances on the skill task. This was evident in predictions for the other and the self. This probably results from a greater perceived control over outcomes where skill is relevant. Ability, effort, and task difficulty were all more relevant for performance on the skill task. These are either stable, predictable causes (ability, task difficulty), or personally controlled variables(effort). Luck was the primary factor influencing attributions on the luck task. The outcome manipulations revealed that subjects emphasized internal factors when explaining success(ability, Int/Ext),and external factors to explain failure(luck, task difficulty). The sex of subject main effect simply reinforces many earlier findings that males are more optimistic than females in predicting performance.

The pattern of results obtained in the task x outcome interactions reveals that the luck-skill distinction affects attributions much less when the person succeeds. In attributing the causes for failure on a skill task, the task difficulty is perceived as important. A similar pattern emerged on both measures of task difficulty. Effort was assigned less importance in explaining failure at a luck task, but considerable importance when the failure was on a skill task. Luck was least important when attributing the cause for success on a skill task. Male subjects were especially unlikely to rate luck as important when the person succeeded (Outcome x SS).

The interactions involving the Stimulus Person variable were of primary interest. There we see the influence of the skill-luck distinction in producing

different attributions for males' and females' performances. The three-way interaction on the predictions question shows that males expect males to be inferior to females when the outcome is dependent upon luck, but they reverse their expectations when the task requires skill. Female subjects did not show this pattern, and, in fact, they showed a slight reversal. This tendency to see females as especially adept at luck tasks is evident in the SP x Task interaction on the luck scale. On the luck task, luck is less important for explaining the female's outcome, but it is more important in explaining her performance on a skill task. The percentages assigned to task difficulty show this same type of effect. The luck task is less difficult for the female, while the skill task is more difficult.

The interaction on the subjects' predictions for their own outcomes again seems to reflect the sex-linked expectation. The males outcomes are more influential when the task involves luck, but the females are more relevant for the luck task.

Finally, there is some indication that females are not as biased in their judgments of female performance as males are. Or, at least, they are biased in a different direction. Females showed the reversal in their prediction for the other's performance, and they tended to evaluate females as being more successful than males. Males, on the other hand, rated males as more successful.

The overall pattern of results suggests that there is an underlying tendency to view females as possessing greater luck, since they are expected to be superior when luck is required. Unfortunately, this seems to come at the expense of the usual internal causes emanating from ability or effort.

Footnotes

1- For the purposes of analysis, these ratings were used to create an index reflecting the relative use of internal factors over external variable factors(luck). The percentages assigned to ability and effort were added, and the percentage assigned to luck was deducted. The outcome was normalized by dividing by the total assigned to these three categories. This index was named Int/Ext and can vary from +1 (all internal, no luck) to -1 (all luck). The Task Difficulty percentage was analyzed separately. Although obviously not orthogonal, by normalizing the index the validity of this procedure is improved, and the theoretical utility of the two measures is maintained. For both measures the arc sine transformations were used in the actual analyses.

Table 1

Summary of Analyses of Variance (F-scores)

Effect	Manova	Prediction Ability	Effort	Luck	Task Diff	Int/Ext	Task %	Own	Success
Stimulus Person (SP)	.59								
Task	13.90 a	14.22 b	26.42 a	44.61 a	85.62 a	11.59 b	86.30 a	11.98 b	29.59 a	14.01 b
Outcome	89.49 a		13.02 b		11.14 b		11.12 b	7.43 c	43.13 a	690.53 a
Sex of Subject (SS)	3.10 c								17.39 a	
SP x Task	2.92 c				9.87 c			9.75 c		
SP x Outcome	1.57									
SP X SS	2.84 c									19.91 a
Task x Outcome	3.20 c			5.94 d	4.21 d	5.97 d		4.28 d		
Task x SS	1.11									
Outcome x SS	2.87 c	4.47 d			10.27 c					
SP x Task x Outcome	2.85 c			3.76 e					10.50 c	
SP x Outcome x SS	2.15 d									
SP x Task x SS	.90	4.36 d								
Task x Outcome x SS	1.41									
SP x Task x Outcome x SS	1.67									

a $p<.0001$
b $p<.001$
c $p<.01$
d $p<.05$
e $p<.06$

Note: Degrees of freedom for the Manova were 9 and 133
Degrees of freedom for the univariates were 1 and 141

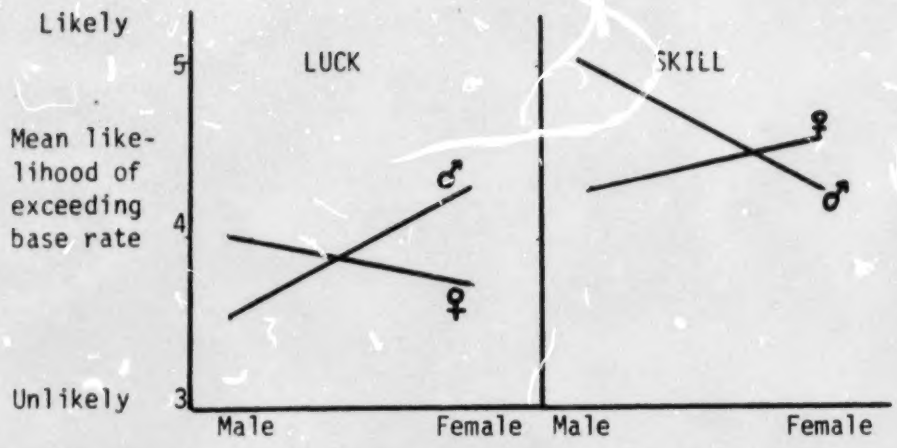

Figure 1. Predictions for Stimulus Person's Performance

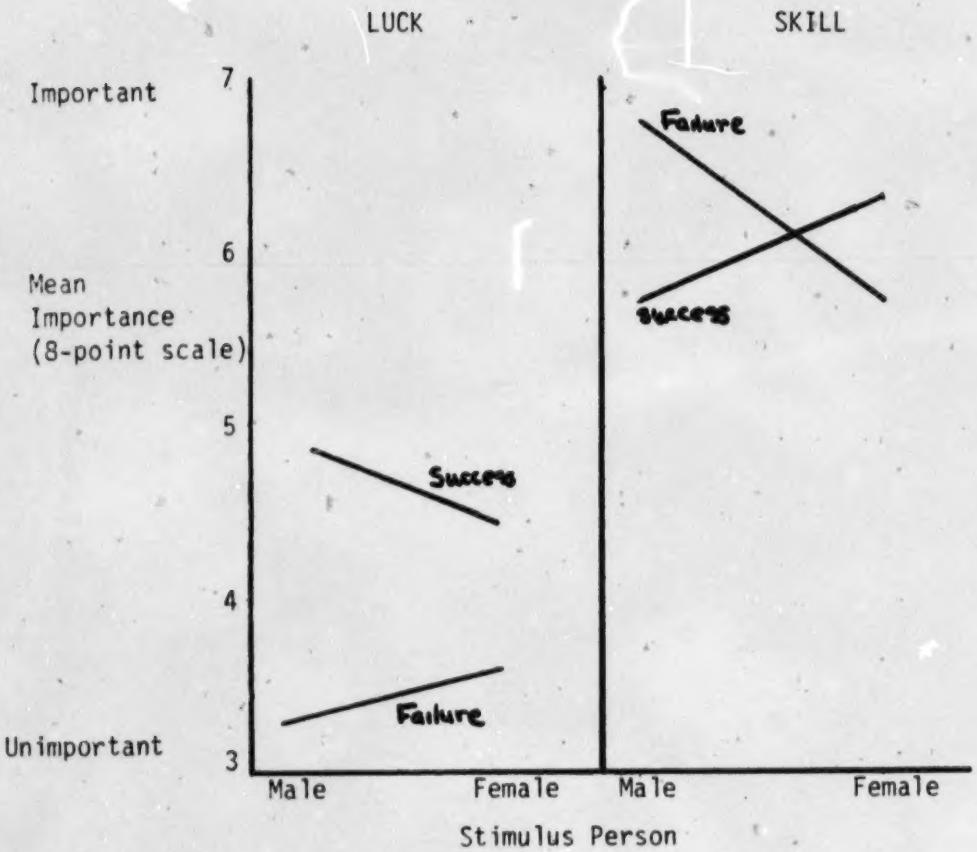

Figure 2. Importance of Effort in Determining Performance

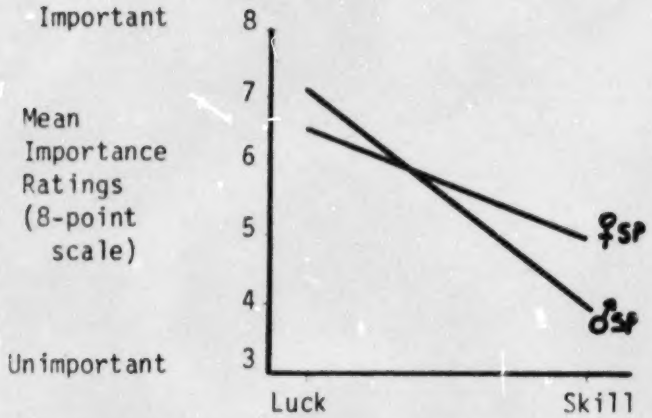

Figure 3. Ratings of Importance of Luck

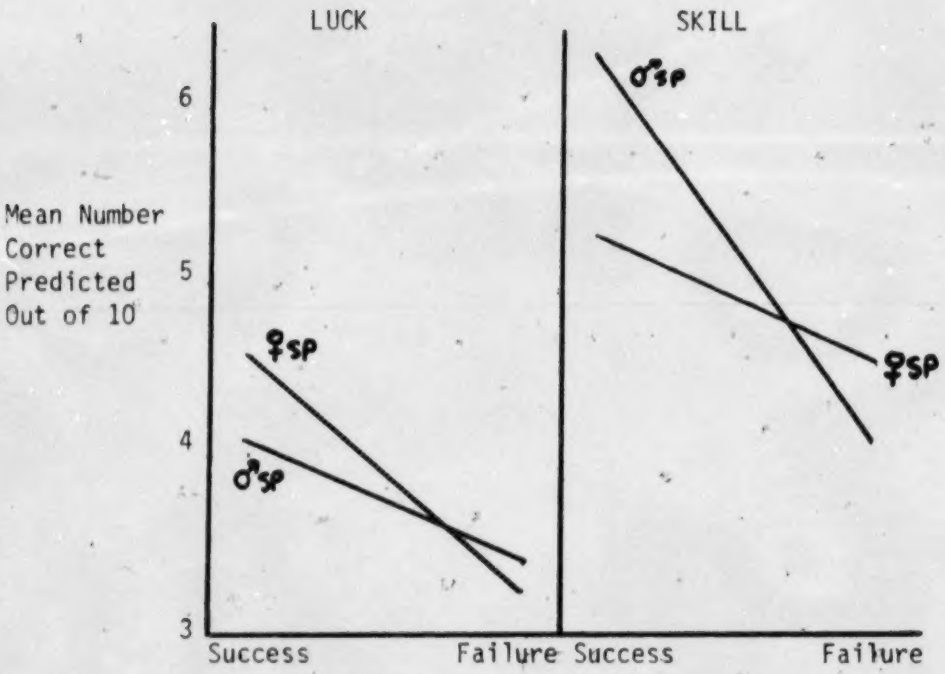

Figure 4. Predictions for Own Performance